The Impact of Hearing Loss on Literacy Development: The Role of the Home and School

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Abstract: **This paper is part of a broad study that looked at the impact of hearing loss on literacy skills development. The paper explores the role of the home and the school in the development of literacy skills among learners with hearing impairments. The study employed mixed methods where both qualitative and quantitative techniques were used. However, the case study design largely underpinned the study. The representative sample was composed of five educators (two teachers and three administrators) and 10 parents who were conveniently selected. Questionnaires, interviews and observation were the data gathering tools used. The results showed that educators felt that the curriculum did not support both English and Zimbabwean Sign Language equally as needed for literacy development in the teaching of students with hearing impairment. From the observations and interviews carried out, it was established that there was no equal time allocation on the timetable to both languages. There was no formal teaching of Zimbabwean Sign Language as a subject like English. There were no materials that could be used in the teaching of Zimbabwean Sign Language. The study recommended that language development should be the primary consideration when teaching students who are pre-lingually deaf (either born deaf or became deaf before acquiring language). To counteract the apparent language deficit in hearing families with children who are deaf it was recommended that a variety of strategies to provide meaningful language experiences be employed. Teachers were encouraged to share these suggestions with families, as well as remember them in their own teaching.**

Keywords: **literacy development, hearing impairment, sign language, deaf, educators.**

1. INTRODUCTION

Literacy provides students with hearing impairment with opportunities to enter the world of literature and enjoy videos, television with captioning and other forms of entertainment with their hearing peers. It allows them to access information through all types of media. Opportunities to read and enjoy books alone, with friends or with teachers are important learning experiences for all students. Exploring the written word through drawing and writing also benefits all students (Briggle, 2005). Children who are hearing impaired, like their hearing peers, participate in literacy events and use written language in many typical ways. The current situation in which, learners with hearing loss experience difficulties in achieving normative standards of literacy in spoken and written language, is not new. However, as already stated, the consequences of low literacy skills for people with hearing impairment this digital era are far graver than at any other era. High levels of literacy achievement are now more important than ever before. Literacy skills have become central to the daily communication and information requirements of students with hearing impairment. Leigh (2000) noted that, for most individuals with hearing impairment, access to telephone communication is via a text message in a cellular-phone. In these situations, communication is totally dependent upon their literacy skills and those of their communication partners who, in a large percentage of cases are deaf themselves.

Similarly, in regards to news and information on public affairs, a strong dependence on literacy skills is again evident. In a society where so much information is conveyed through the electronic media, this represents a very high degree or reliance upon print-based media. Strong literacy skills are also needed to allow students with hearing impairment to complete in the job market. Students with hearing impairment, who use sign language to communicate, live and interact in an English speaking world. They are expected to read and produce English in assignments at school. Students with hearing impairment are required to be functionally bilingual to effectively participate in their community. However, literacy development in students who are impaired is a multifaceted issue. Literacy achievement in a spoken and written language is a challenge for students with hearing impairment (Rottenberg and Scarfoss, 1992).

1.1 Statement of the Problem:

Students who are deaf experience poor reading and writing performance in schools (Padden and Ramsey, 1993). There are reported significant lower levels of attainment in literacy in students with hearing impairment when compared with their hearing age peers. Most students with hearing impairment in Zimbabwe today (roughly 80 percent) are placed in a mainstream school environment, that is, in integration units hearing peers and teachers (Salend, 2001). As students with hearing impairment are increasingly being educated in mainstream public school programs and are required to be functionally bilingual to effectively participate in their community, there is a need to critically analyse the factors affecting literacy development as these factors affect the student's educational success.

1.2 The Research Question:

What is the rle of the Home and School in literacy development among deaf learners?

1.3 Delimitation of the Study/ Scope:

The study focused on factors affecting literacy development in students with learning impairments who are in an integration unit at primary school level. Out of the two primary schools with integration units of students with hearing impairment in Epworth- Mabvuku/Tafara District in Harare, the research was carried out at Epworth Primary School in Epworth, a township located North-East of the capital city, Harare . The community that makes up the township is of different cultural groups, the Shona, Ndebele and Deaf. Furthermore, these students with hearing impairment that are enrolled in this school are neither of English nor part of the Deaf cultural group.

1.4 Theoretical Framework:

Theoretical framework which informed this study emerged from the socio-cultural model of literacy development relating to students who are hearing impaired and with limited English proficiency. According to Rodda and Eleweke (2000), in socio-cultural model, it is considered that people who are deaf have a culture and language different from hearing people and are linguistic minorities for whom the learning of English literacy skills must be considered a second language learning.

2.   LITERATURE REVIEW

The role of Sign Language in literacy development:

Hoffmeister, Padden, Ramsey, Strong and Prinz (2000) wanted to determine the relationship among English reading achievement, knowledge of complex sentences in 'manually encoded English', and the comprehension and production of Sign Language. They studied students who were deaf aged 8 and 16 years. Twenty-one of the fifty subjects had intensive Sign Language exposure (through parents who are deaf or residential schools). Measures were made of reading comprehension in English and Sign Language. Results included finding that the knowledge of complex English syntax was the major predictor of English reading achievement as measured by comprehension and production of complex sentences in 'through the air' English (MCE) tasks. Additionally, advanced knowledge of Sign Language as reflected in metalinguistic tasks presented (synonym/antonym judgment) were also significant predictors of English reading achievement (BG de Garcia). Their conclusion was that fluency in Sign Language particularly the development of meta-linguistic skills, allows a reader with hearing impairment to reflect on language structure and do better on

decontextualised reading tasks (BG de Garcia). They concluded that higher level skills in both Sign Language and English facilitate the development of higher reading skills in English.

Strong and Prinz (1997) studied the relationship between competence in Sign Language and English reading performance and found that even though students with mothers who were deaf outperformed their peer in reading tests, when the levels of Sign Language competency were equivalent for children who are deaf and of hearing parents, there were no differences. They concluded that the acquisition of Sign Language improve the reading for all students who are deaf regardless of parental hearing status. They argue, therefore, that bilingual-bicultural programs for students who are deaf will produce better outcomes in terms of English literacy. They have determined there is a correlation between level of Sign Language competence and English literacy. Utilizing Sign Language enhances reading and writing development in learners with hearing impairment. Bilingual approach enhances development (Briggle, 2005). The findings point to a need to develop literacy teaching approaches which respond to individual sign bilingual language profiles. In particular, the roles of Sign Language and of manually coded English need to be clarified so that their combined or separate use maximizes literacy learning opportunities of students with hearing impairment. From the research by Strong and Prinz (1997) one might ask the questions about the situation with our Zimbabwean students who are deaf; are they proficient in sign language; Are the students competent in English; since it was established that there is a correlation between level of sign language competence and English literacy? Are their teachers proficient signers? What are the effects of bilingual programmes in schools on literacy development of these students who are deaf?

Home and school environments optimal for literacy development:

Students with hearing impairment profit from instruction in highly literature home and school communities where they are afforded a wide variety of models who demonstrate what readers and writers do, what they communicate about and how written language variations, such as face-to-face language encounters, depend upon particular goals and purposes, settings, subject matter, and communication partners (Truax, 1992).Some children with hearing impairment may be doubly disadvantaged by reading environments at home and at school which are less than facilitative. Most schools in Zimbabwe face shortages of learning and teaching materials like text books, for example. Some students come from poor economic home backgrounds where there are no reading materials. Most students with hearing impairment come from families who do not share their impairment and as a result are disadvantages linguistically in that their parents are not native signers. These students who are deaf are also taught by hearing teachers who are also not native signers. They do not get exposure to deaf models who are native signers. In most cases parents of students who are deaf are never consulted about the education of their children. Maybe it is because of the low educational expectations of both parents and educators.

Some implications can be drawn for both teacher training and research, for effective parent- teacher partnerships that lead to consistency and joint problem- solving in promoting literacy development in children with hearing impairment. Erting (2003) makes the case for the critical importance of providing students with hearing impairment the same opportunities hearing children have for language and literacy development by providing accessible classrooms in which they can acquire Sign Language and English. This implies the need for provision of bilingual education programmes. Bilingual approach as stated earlier enhances literacy development (Briggle, 2005). Gregory (1996) defined bilingual education as an approach to the education of students who are deaf which uses both the sign language of the Deaf Community and the written and spoken language of the hearing community. Briggle (2005) postulated that providing a developmentally appropriate, print–rich environment in integral to literacy success. Exposure to competent language models be they teachers or peers, encourages language development. Opportunities to respond and ask questions in class also help. The social interaction between students with hearing impairment and their educators has a profound effect on academic success (Kuntze, 1998). Students with hearing impairment who have comprehensive access to academic content through a complete linguistic system are able to engage in meaningful communication with peers and instructors allowing them to mediate the process of conceptual development with others, rather than doing so alone. Bloome and Green (1992) suggested that students who are able to mediate formal instruction via collaborative dialogue with peers and educators are actively facilitating the literacy process. Thus, students who are unable to gain access to such strategies are at a disadvantage. This is the situation with most of the students with hearing impairment.Teaching hearing peers to sign increases the amount of social interaction and directly affects learning. Having a student who is deaf should be a learning

experience for everyone. Being prepared and understanding more about students with hearing impairments only can improve the quality of education teachers provide. This calls for the need for teachers teaching students with hearing impairment to undergo teacher training in special needs education.

3. METHODOLOGY

The study employed mixed methods where both qualitative and quantitative techniques were used. However, the case study design largely underpinned the study. In this case the single unit of study was an institution, Epworth Primary School Integration Unit. As stated by Merriam and Simpson (1984), a case study tends to be concerned with investigating many, if not all, variables in a single unit. In this case study of Epworth Primary School Integration Unit, both the two teachers of students with hearing impairment in the Integration Unit, together with their three supervisors, the school head, deputy and teacher in-charge were part of the population. All the sixteen parents and caregivers of the students in the integration unit also constituted the population. Of the two integration units of students with hearing impairment at primary level in Epworth – Mabvuku/Tafara District, the Epworth Primary School Integration Unit was purposively selected for the study because it exhibited characteristics of interest to the researcher. It was the integration unit of students with total hearing loss that was so severe that they could not process linguistic information through hearing, with or without amplification. All the five educators (two teachers and three administrators were made part of the sample due to small numbers. Convenient sampling was used to select 10 parents from the 16 parents. Questionnaires, interviews and lesson observation were the data gathering tools used. A pilot study was carried out at one of the primary schools with an integration unit in Hatfield. The five respondent educators who participated in the pilot study were selected by convenience and were not included in the main research. The researcher also pilot-tested the interview research questions scheduled for parents of student who are deaf on four parents of children with hearing impairment who had come to fetch their children home after school. These parents were also not included in the main research.

4. RESULTS

4.1 Demographic Data:

Table 4.1: Characteristics of the two classes

Class Code	A	B	Total	%
No of Boys	6	5	11	58
No. of Girls	5	3	8	42
Total Enrolment	**11**	**8**	**19**	**100**
Male Teachers	0	0	0	0
Female Teachers	1	1	2	100
Total No. of Teachers	**1**	**1**	**2**	**100**
Teacher: Pupil Ratio	**1:11**	**1:8**	**1:10**	

The striking features of table 4.1 are the high teacher: pupil ratio of Class A.

Figure 4.1: Distribution of Educators by Professional Qualification

Figure 4.1 indicate that all educators were qualified teaching professionals. However only one teacher was a specialist educator and the rest were regular educators
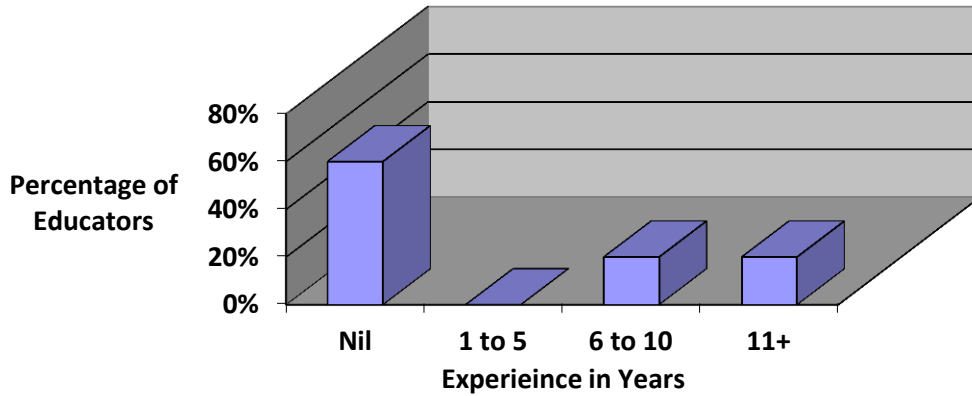

Figure 4.2 Experiences in Teaching Students with Hearing Impairment

The striking feature of figure 4.2 is the vast experience of educators in teaching students with hearing impairment but without training in Special Needs Education

4.2 The Home and School Environment that can enhance Literacy Development

Table 4.2: Educator's views on school environment that can enhance literacy development (N=5)

Home and School literacy environments	Responses										Modal Response
	SD		A		N		D		SD		
	No	%	No	%	No	%	No	%	No	%	N0
a) Administrators in integration units do not have experience in teaching students with hearing impairment.	1	20	3	60	0	0	1	20	0	0	Agree
b) There are not enough monetary incentives to attract more educators (already practicing) to train in the instruction of children with hearing impairment.	4	80	1	20	0	0	0	0	0	0	Strongly Agree
c) Administrators in Integration Units need training in Special Needs Education to supervise the teaching and learning of students with hearing impairment.	3	60	1	20	1	20	0	0	0	0	Strongly Agree
d) Use of computers enhances literacy development of students who are deaf.	0	0	3	60	4	40	0	0	0	0	Agree
e) The parents' and educators' hearing status has a bearing on literacy development in students with hearing impairment.	1	20	3	60	0	0	1	20	0	0	Agree
Aggregate											Agree

There was an agreement to the assumption that administrators in integration units have no expertise in the teaching of students with hearing impairment and need to undergo Special Needs Education training. Most of the respondents agreed that the hearing status of educators and parents impacts negatively on literacy development of students with hearing impairment.

Home and School Literacy Environments:

The key research question sought to establish the home and school environments that can promote literacy development.

Table 4.3: Data on presence of other family members with hearing impairment (N=10)

Any parent/ siblings who are deaf?	No. of Respondents	Respondent %
Yes	1	10
No	9	90
Total	**10**	**100**

Most of the family members are hearing, showing that most students with hearing impairment are exposed to non-native linguistic input in the home.

Table 4.4: Parents' Responses on Mode of communication with the child who is deaf in the family (N=10)

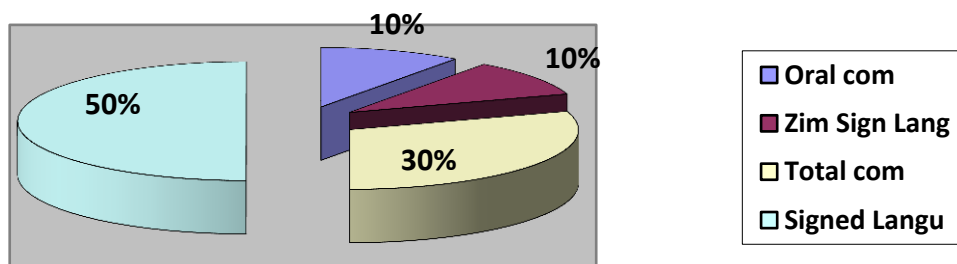| Mode of Communication	No. of Respondents	Respondents %
Zimbabwean Sign Language	1	10
Signed Language	5	50
Total communication	3	30
Oral communication	1	10
Total	**10**	**100**

Figure 4.3: Distribution of Parents by Mode of Communication

The language modality mostly used in the home is manual communication in form of signed language.

5. DISCUSSION

Eighty percent of the respondent educators felt that the curriculum did not support both English and Zimbabwean Sign Language equally as needed for literacy development in the teaching of students with hearing impairment. From the observations and interviews carried out, it was established that there was no equal time allocation on the timetable to both languages. There was no formal teaching of Zimbabwean Sign Language as a subject like English. There were no materials that could be used in the teaching of Zimbabwean Sign Language. In Zimbabwe there is not much documentation in sign language except for the Zimbabwean Sign Language dictionary that can be used by specialist teachers to learn some signs. However, the teachers of students with hearing impairment did not have the dictionary. They only had a few charts with signs and the alphabet as teaching material

The study also established that there was no proficiency testing of Zimbabwean Sign Language at Grade 7 Public Examinations by Zimbabwe Schools Examinations Council (ZIMSEC). It was difficult for educators to assess the progress made by students in Zimbabwe Sign Language. Currently, much assessment carried out is inevitably based on procedures for considering the student's English language skills but this is not appropriate when considering students with hearing impairment. English assessment, for example, often focuses on use of tenses or proportions yet these are differently realized in Zimbabwean Sign Language.

Both parents and educators preferred haring students who are deaf receive their education in special schools. They felt that special schools had adequate resources needed for the education of students with hearing impairment compared with integration units in regular schools. Their perceptions of special school contradicted with Briggle (2005) who felt that students who are deaf can benefit from many of the literacy activities already in place within the regular education classroom.

From the interviews with educators, Interview Item 4, it was established that there were attitudinal problems that impeded the literacy development of students with hearing impairment. The results established that these attitudinal problems emanated from socio-economic factors. Educators strongly agreed that the socio-economic factors where a lack of monetary incentives to attract more (already practicing) regular teachers to acquire skills in the instruction of students with hearing impairment, traditional beliefs and misconceptions of deafness, society's lack of knowledge about socio-linguistic issues in general and deaf issues in particular.

Sixty percent of the respondent educators agreed to the assumption that the hearing status of parents and educators had a bearing on literacy development of students with hearing impairment while 20% of them strongly agreed to the assumption. All the respondents were culturally hearing people who are not native signers and as a result a situation whereby students with hearing impairment were learning sign language from people who were learning it as well as created. This in turn impacted on the literacy development of students with hearing impairment. The only way these students can improve their signing is through interaction with their peers who are deaf also as suggested by Dickson (2001). Interactive language enhances literacy development (Erting, 2003).

REFERENCES

[1] Allen, T. (1986)"Parents of academic achievement in hearing impaired students: 1983" In Schildroth, A. and Karmer, M. (Eds), Deaf Children in America (pp.161-206) San Diego, CA: College – Hill Press

[2] Bench, R.J. (1992)Communication Skills in Hearing Impairment Children. London: Whurr Publishing.

[3] Best, J. (1989).Research in Education, New Jersey: Prentice- Hall.

[4] Bloome, D. and Green, J. (1992). Educational contexts of literacy. Annual Review of Applied Linguistics. 12:49-70.

[5] Braden, J. (1994)Deafness, Deprivation, and IQ. New York: Plenum Press.

[6] Briggle, S.J. (2005).Language and Literacy Development in Children who are deaf or hearing impaired Kappa Delta Pi Record (Online) Available url: http://www.readingrockets.org/atoz/

[7] Calderon, R. (2000)"Parent and Greenberg of child's language, early reading and social –emotional Development."

[8]   Calderon, R. and Greenberg, M. (2000). "Challenges to parents and professional in promoting social- economical development in deaf children." In Spencer, P.E., Erting, C.J. and Marschark, M. (Eds), The deaf child in the family and at school: Essays in honor of Kathryn P. Meadow- Orlans (pp.167-185). Hillsdale, NJ: Lawrence Erlbaum(2000)

[9]   Carr, T. and Levy, B. (1990).Reading and its development: component skills approaches New York: Academic Press, 1990.

[10] Chamberlain, C. and Mayberry, R. (2000) "Theorizing about the relation between American Sign Language and reading". In Language Acquisition by Eye. C. Chamberlain, C., Morford, J. and R. Mayberry, R. (Eds). Mahwah, NJ: Lawrence Erlbaum Association.

[11] Calderon, R. and Greenberg, M. (1993)."Considerations in the adaptation of families with school- aged deaf children." In Marschark, M. and Clark, D. (Eds). Psychological Perspectives on Deafness. Hillsdale, NJ Lawrence Erlbaum.

[12] Dickinson, D. K. and Tabor, P.o. (2001)Beginning literacy with language young children learning at home and school. Baltimore; Brookes.

[13] Erting, C.J. (2003)."Language and literacy development in deaf children: implications of a socio- cultural perspective." In: Bodner-Johnson B., Sass-Lehrer, M. (Eds). The Young Deaf of Hard of Hearing Child: a family Centred Approach to Early Education. Baltimore: Brookes.

[14] Ewoldt, C. (1991)."The early literacy development of deaf children." Moores, D. and Meadow- Orlans, K. (Eds), Educational and Developmental Aspects of Deafness. Washington, D.C. Gallaudet Press.

[15] Gall, D.M., Borg, W.R. and Gall, J.P. (1996) Educational Research: An Introduction (6th Edition) New York: Longman Publishers

[16] Gioia, B., Johnstone, P. and Cooper, L. G. (2001)"Documenting and developing literacy in deaf children". Literacy Teaching and Learning, Volume. 6, no, 1, p.1-22.

[17] Goldin- meadow, S. and Mayberry, R.I. (2001)"How do profoundly deaf children learn to read?" Learning Disabilities Research and Practice, Volume. 16 no.4, p.223-229.

[18] Greenberg, M. T. and Kusche, C.A. (1993)   Promoting social and emotional development in deaf children: The PATHS project. Seattle: University of Washington Press.

[19] Gregory, S., Knight, P., McCracken, W., Powers, S and Watson, L. (1996)   Issues   in   Deaf   Education. London: David Fulton.

[20] Harris, M. and Beech, J.R. (1998)"Implicit phonological awareness and early reading development in prelingually deaf children."Journal of Deaf Studies and Deaf Education, Volume. 3, no.3 p.205-216.

[21] Hoffmeister, R. (2000)."A piece of the puzzle: ASL and reading comprehension in Deaf children". (Eds). In Chamberlain, C. , Morford, M. and Mayberry, R. Language Acquisition by Eye. Mahwah, NJ: Lawrence Erlbaum Assoc

[22] Horne, M.D. (1985).Attitudes Towards Handicapped Students: Professionals and Parent Reactions. Hillsdale, NJ: Lawrence Erlbaum Associates.

[23] Leedy, P.D. (1997).Practical Research: Planning and Design (6th Edition) New Jersey: Merril Prentice Hall.

[24] Leigh, G.R. (2000) "Principles and Practices of Literacy Development for Deaf Learners: A Historic Overview." Journal for \Deaf Studies and Deaf Education 5:1 Winter.

[25] Katasse, C. (1997). "Deaf children and English: More ways parents can help." Perspectives in Education and Deafness 15 (4): 4-5.

[26] Koskinen, P., Welch, O., Jensema, C., and Alexander, E. (1988). "Using captional television in classroom reading instruction." Teaching English to Deaf and Second- Language Students, 6 (1), 15-19.

[27] Knuckey, J. (2002) Information for Disability Liaison Officers, Centre of Excellence for Students who are Deaf and Hard of Hearing, NMIT.

[28] Leyser, Y. (1985) "Parents involvement in school: A survey of parents of handicapped students." Contemporary Education 57, 38-43.

[29] Marschark, M. and Harris, M. (1996). "Success and failure in learning to read: The special case of deaf children." In: Cornoldi C., Oakhill, J. (eds) Reading comprehension difficulties: processes and intervention. Mahwah, NJ: Erlbaum.

[30] Maxwell, M. (1985). "Some functions and uses of literacy in the deaf community." Language in Society 14 (2): 205-21.

[31] Mayer, C. and Wells, G. (1996). "Can the linguistic interdependence theory support a bilingual-bicultural model of literacy education for deaf students?" Journal of Deaf Studies and deaf Education Volume 1. No.2, p. 93-107

[32] McAnich, A.M. (1993). Teacher Thinking and the Case Method, New York: Teachers College Press.

[33] McEnany, G. and Wilson, H.S. (1993) Introducing Research in Social Sciences (2nd Edition). Redwood City: SAGE Publications.

[34] McMillan, J. H. and Schumacher, S. (1989). Research in Education . A Conceptual Introduction (2nd Edition) Virginia: Harper Collins Publishers.